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CLM PTO

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Claim 1. (Amended) An inlet arrangement for inserting a preform into a furnace for drawing a fiber, which furnace is of the type including an enclosure at the top of which there is an opening to allow insertion of the preform which moves vertically downwards in translation during fiber drawing; said inlet arrangement comprising both an injector situated at the level of the preform inlet opening to inject inert gas onto the perimeter of the preform to fill the enclosure of the furnace, and an airlock comprising at least one seal fixed by means of a seal support above the injector and designed to allow the preform to pass therethrough with the cylindrical main body of the preform being surrounded to prevent gas circulating between the surrounding environment and the inside of the furnace at the level where the at least one seal is situated; said airlock further comprising a closure member that is selectively operated between a closed position and an open position for closing and sealing the top of the furnace above the injector, and for maintaining a positive internal gas pressure at the furnace inlet to prevent the surrounding entering at that level, and wherein said airlock is disposed above said injector so as to be located upstream of said injector.

Claim 2. (Amended) An inlet arrangement according to claim 1, wherein

said closure member is disposed above the injector to enable the preform body to be lowered into the enclosure of the furnace only when said closure member is open and to close and seal the top of the furnace above the injector when said closure member is closed in the absence of a preform at the level of said closure member; and

wherein said airlock further comprises an airlock chamber defined longitudinally by two stages of seals (17A, 17B) in which the body of a preform can slide in a sealed member, said two stages of seals including said at least one seal forming one stage and a second seal forming the second stage, said chamber fulfilling a furnace airlock function in conjunction with a stage of at least one of the two stages of seals of the closure member as soon as a preform is present at the level of said at least one of said two stages of seals, which it closes, and the length of the body (9') of the preform is greater than or at least equal to a maximum preform drawing operating limit "l_{min}".

3. An inlet arrangement according to claim 2, wherein the distance between the stages of seals of its airlock is related to a minimum length that corresponds to a maximum preform operating limit "l_{min}".

4. (Amended) An inlet arrangement according to claim 1, wherein the injector has inert gas injector vents (15) which point towards its airlock in addition to injector vents (14) which point towards the inside of the furnace.

5. (Amended) An inlet arrangement according to claim 1, wherein at least one of the stages of seals is made up of stacked graphite seals (17A, and/or 17B).

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6. An inlet arrangement according to claim 5, wherein the seals are cooled to prevent premature deterioration.

7. (Amended) A furnace for drawing fiber (2') including an enclosure (4') at the top of which is an opening to allow insertion of a preform, which moves vertically downwards in translation during fiber drawing, and a preform inlet arrangement (13') above the enclosure and including an injector (6') situated at the level of the preform inlet opening to inject inert gas onto the perimeter of the preform to fill the enclosure of the furnace, and at least one seal (17B) fixed by means of a seal support above the injector and through which the preform passes, whose cylindrical main body (9') it surrounds to prevent circulation of gas between the surrounding environment and the inside of the furnace at its level, characterized in that said furnace includes an inlet arrangement according to claim 1.

Claim 8. (New) The inlet arrangement of claim 1, wherein in said closure member is disposed between said at least one seal and said injector.

Claim 9. (New) The inlet arrangement of claim 8, wherein said closure member, when in the closed position, closes and seals the top of the furnace so as to isolate the furnace and the injector from said at least one seal.

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Claim 10. (New) An inlet arrangement for inserting a preform into a furnace for drawing fiber, comprising:

an inlet;

an outlet downstream of the inlet,

a first conveying path through the inlet arrangement extending from the inlet to the outlet, the first conveying path for conveying the preform body from and through the inlet to and through the outlet;

a first seal;

a closure member located downstream of the inlet and between the first seal and the outlet, the closure member selectively moveable between a closed position that closes and seals the first conveying path and an opened position that opens and unseals the first conveying path; and

an injector located downstream of the closure member and between the closure member and the outlet, the injector for injecting a gas into the first conveying path of the inlet

arrangement.

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Claim 11. (New) An apparatus for drawing a fiber, comprising:

a preform body;

an inlet arrangement, comprising:

an inlet;

an outlet downstream of the inlet,

a first conveying path through the inlet arrangement extending from the inlet to the outlet, the first conveying path for conveying the preform body from and through the inlet to and through the outlet;

a first seal;

a closure member located downstream of the inlet and between the first seal and the outlet, the closure member selectively moveable between a closed position that closes and

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seals the first conveying path and an opened position that opens and unseals the first conveying path; and

an injector located downstream of the closure member and between the closure member and the outlet, the injector for injecting a gas into the first conveying path of the inlet arrangement; and

a furnace located downstream of the inlet arrangement and having a second conveying path aligned with the first conveying path for further conveying the preform body through the furnace; and

wherein the closure member, when in the closed position, seals off the injector and the furnace from the first seal.

Claim 12. (New) The apparatus for drawing a fiber according to claim 11, wherein the preform is inserted in the first seal, so that the first seal, together with the preform, seal off from the inlet of the inlet arrangement a first portion of the first conveying path that is downstream of the first seal, so as to substantially prevent gas injected into the first conveying path by the injector from escaping outside the inlet arrangement from the inlet.

Claim 13. (New) The apparatus for drawing a fiber according to claim 11, wherein the injector comprises first injector vents that direct gas in an upstream direction of the first

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conveying path toward the inlet and in a downstream direction of the first conveying path towards the outlet.

Claim 14. (New) The apparatus for drawing a fiber according to claim 11, further comprising a second seal disposed between the closure member and the first seal, and wherein the preform is inserted in the second seal, so that the second seal, together with the preform, seal off from the inlet of the inlet arrangement a second portion of the first conveying path that is downstream of the second seal, so as to substantially prevent gas injected into the first conveying path by the injector below the second seal from escaping upstream past the second seal.

Claim 15. (New) The apparatus for drawing a fiber according to claim 11, wherein the first seal comprises stacked graphite seals.